

The Citizen Forester

JUNE 2015

Know Your Resources: The 2015 Growing Season

By Rick W. Harper, The 2015 growing season started out well “behind” what we would typically consider to be “normal” development and emergence of landscape plants and their affiliated arthropod pests of importance. Any extra time available, however, may be well-used in doing a final double-check of the resources available at arms-length to help address emergent plant health issues throughout the upcoming growing season for our urban trees and shrubs.

Invest the time in getting in-depth resources of excellence
There are many excellent compendia that professional urban foresters, arborists, and consultants tout as their “favorite.” That being said, it is important to make sure that at least some of the standard “encyclopedias” get top-billing in one’s own library. A sampling of a few of the standard desktop references might include internationally-renowned books, like:

Insects that Feed on Trees and Shrubs, by Warren T. Johnson and Howard H. Lyon (1994, Cornell University Press. 560 pp.)

Diseases of Trees and Shrubs, by Wayne Sinclair and Howard H. Lyon (2005, Cornell University Press. 660 pp.)

Encyclopedia of Trees & Shrubs, by Michael A. Dirr (2011, Timber Press. 951 pp.)

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Abiotic Disorders of Landscape Plants: A Diagnostic Guide, by Laurence R. Costello (et al.) (2003, University of California. 242 pp.)

The Practical Science of Planting Trees, by Gary W. Watson and E.B. Himelick (2013, International Society of Arboriculture. 250 pp.)

The Illustrated Encyclopedia of Trees, 2nd ed., by David More and John White (2013, Princeton University Press. 832 pp.)

Trees of the Northern United States and Canada, by J.L. Farrar. (1995, Iowa State University Press. 502 pp.)

These well-known references can provide second-to-none, in-depth insights into the world of identifying, selecting, planting, and maintaining urban trees and landscape plantings. If you are implementing actual pest management strategies, you should complement this desktop set with the newest copy of your state pest management guide. UMass Extension offers a freely accessible [Professional Management Guide for Diseases of Trees and Shrubs \(online\)](#), and residents of neighboring states may contact their local university extension programs to access their respective guides. Residents of New York have access to a complete set of [pest management guide-lines](#) updated annually by Cornell University specialists.

Invest the time in getting resources that you can take with you.

There are numerous field guides produced by University Extension programs as well as private organizations. Though detail is sacrificed for portability, the benefit of being able to bring a guide on-site to help diagnose an urban tree or landscape plant-related problem can be very helpful. A sampling of a few portable references might look like:

A Pocket IPM Scouting Guide for Woody Landscape Plants, by Diane Brown-Rytlewski (2003, Michigan State University. 116 pp.). This pocket-guide is a freely-available digest of key arthropod and disease pests, and abiotic problem situations.

The ABC's Field Guide to Young and Small Tree Pruning, by Andrew G. Pleninger and Christopher J. Luley. (2012, Urban Forestry, LLC. 84 pp.)

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Know your Resources

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[Recommended Urban Trees](#), by Nina L. Bassuk (et al.) (2009. Urban Horticulture Institute at Cornell University. 122 pp.)

Wood Decay Fungi Common to Urban Living Trees in the Northeast and Central United States, by Christopher J. Luley (2005, Urban Forestry LLC. 58 pp.)

[Avoiding Excessive Soil over the Root Systems of Trees: A Best Management Practice](#), by Gary Watson (April 2005, Arborist News, International Society of Arboriculture. P. 32-34)

These resources can provide quick-reference insights to help diagnose urban plant-related problems on-site. If one is actively scouting, these resources may be complemented by accessing regularly-updated guides throughout the growing season like UMass Extension's [Landscape Message](#) (online) and [Branching Out](#) (Cornell University). In addition to timely pest emergence/activity, these resources often include up-dated local precipitation and Growing Degree Day (GDD) accumulation information. The [Northeast Regional Climate Center](#) GDD/Precipitation Tables are updated and may be accessed throughout the growing season. It is also worth noting that there are a plethora of apps and other electronically-based resources that are available on your smart-phone/tablet that may help identify a plant or pest-related problem.

Invest the time in getting to know the experts in your local Diagnostic Lab

Each state features highly-skilled diagnostic specialists who receive hundreds (or even thousands!) of verbal and electronic inquiries and plant or pest specimens.

Massachusetts

University of Massachusetts Plant Diagnostic Laboratory
101 University Drive, Suite A7
Amherst, MA 01002
Tel/Fax: 413-545-2826/545-4385
<https://ag.umass.edu/diagnostics>

Other Nearby States:

Connecticut

The Connecticut Agricultural Experiment Station (CAES)
www.ct.gov/caes 'Programs & Services'

University of Connecticut
Home and Garden Education Center,
<http://www.ladybug.uconn.edu>

Maine

University of Maine Pest Management Office
<http://extension.umaine.edu/ipm/ipddl/>

New Hampshire

<http://extension.unh.edu/Agriculture/Soil-Testing-Insect-Plant-Disease-Identification>

New York

Cornell University Plant Disease Diagnostic Clinic
<http://plantclinic.cornell.edu>

Rhode Island

University of Rhode Island Plant Protection Clinic
<http://web.uri.edu/ceoc/plantclinic/>

Vermont

University of Vermont Plant Diagnostic Clinic
<http://pss.uvm.edu/pd/pdc/>

This information may help you – the urban forest manager/enthusiast – better care for the trees and shrubs under your stewardship. **Enjoy the warmer weather that the 2015 season has to offer...it's finally here!**

Rick W. Harper is the Extension Assistant Professor in the Department of Environmental Conservation at UMass-Amherst.

Species Spotlight—Common pawpaw, *Asimina triloba*

By Mollie Freilicher
MA-DCR
Community Action Forester



Where I grew up in Maryland, there were areas where pawpaw was a dominant understory species in some areas along the C&O Canal and Potomac River, due to its spreading by root sprouts and its proclivity for sheltered riparian areas. I happened to be there last

year in May,

when the trees were in bloom, and what a treat! Pawpaw is one of three species in the custard apple (Annonaceae) family that is native to North America. There are about 2,000 species in tropical and warmer temperate areas around the globe. In particular, pawpaw is native to southern Ontario and southwestern New York, south to northwestern Florida, and west to eastern Texas, and also can be found at altitudes up to 2,600 feet in the southern Appalachians. It is not native to Massachusetts, but is hardy to USDA hardiness zones five to eight.



Pawpaw is a small tree or shrub, reaching heights of 15 to 20 feet or taller in ideal conditions, but it can also form a spreading colony. Typically, it has a pyramidal or rounded form. Leaves of pawpaw are alternate, simple, and six to twelve inches long and about half as wide. They are obovate, entire, and acuminate, and are medium to dark green in color. The underside of the leaves is paler and

veins are pubescent. When bruised, the leaves have an unpleasant smell. In fall, the leaves turn yellow, often a brilliant yellow. The bark is thin and brown, usually smooth, or with small plates.



Pawpaw buds are naked and dark brown in color, with the terminal bud being larger than the lateral buds. Flower buds are round, and all buds are brown and pubescent. Pawpaw typically flowers before the leaves emerge, or just as they are emerging in May.

Flowers of pawpaw are a brownish-purple, with six petals. The outer petals are larger

than the inner petals. They are borne singly and are one to two inches wide. In the wild, flies and beetles pollinate pawpaws, but in the cultivated landscape, they may

not be abundant enough for reliable fruit production. Another concern is that pawpaws are not self-fertile. Pollen for fertilization needs to come from genetically different trees. In the cultivated landscape that may mean having another cultivar nearby and hand-fertilizing with a small paintbrush. Read more about hand-pollination on [this factsheet](#) from Purdue University.



The fruit of pawpaw is edible and is a greenish-yellow berry that can come rounded or oblong like a delicata squash. The taste is reminiscent of a banana with a custard-like consistency, and inside the fruit are a few shiny brown seeds, approximately an inch long. A variety of wildlife consumes pawpaw fruit:

raccoons, gray foxes, opossums, and black bears.

In the landscape, pawpaws do best in moist, fertile, mildly acidic soils and full sun exposure. Pawpaw can be difficult to transplant, so planting it when trees are small is advised. Pawpaw can serve as an interesting specimen or as a planting along a woodland edge.

Photos: Form, Bark: Virginia Tech, Flower, fruit (inside) Wikimedia; Fruit (exterior): Scott Bauer, USDA; twig and buds, Mollie Freilicher.



Growing on Trees

News from the USDA Forest Service

Video on Value of Urban Trees Earns Award

Goshen, IN--A video funded by a Great Lakes Restoration Initiative grant from the USDA Forest Service describes economic, social, ecological, and aesthetic benefits of urban trees. [The Broadcast Education Association](#) awarded Goshen College students Chau Bui and Jake Smucker, who made the film, second place in the instructional/educational video category at their annual Media Arts Festival. [Read more and watch the 14-minute video](#) on the Goshen College Web site.

Free Educational Resources on Invasive Insects

The USDA Animal and Plant Health Inspection Service is offering a variety of educational resources designed to make middle-school-aged students aware of invasive species and the damage they cause. There are lessons and activities for both classroom and outdoors. Access the resources at Hungrypests.com.

New Mesoamerican Pine Beetle Described by Scientists

April 14, 2015—A newly-discovered species of tree-killing bark beetle has been described in a new paper. The Mesoamerican adult beetle tends to be somewhat larger than the southern pine beetle, and the holes where they enter the tree's bark exude more resin, producing bigger "pitch tubes." Field observations suggest that the new species attacks trees shortly after southern pine beetle, colonizing the lower trunk and branches. The mesoamerican pine beetle also has a distinct pheromone chemistry and does not respond to traps baited with southern pine beetle lures. Read more at ScienceDaily.org.

Keep your eyes peeled for Emerald Ash Borer

It's June and that means it's time for the emergence of Emerald ash borer (EAB) adults. There are known populations of EAB in Berkshire County, Suffolk County, and Essex County, but EAB could be lurking anywhere in the Commonwealth. Adults chew their way out of trunks and branches this time of year and seek out mates and new trees to infest. Emergence of EAB begins around 450-500 Growing Degree Days (GDD), which coincides with the blooming of black locust. (Check out [this post](#) from 2012 for some background information on Growing Degree Days.) Be on the lookout for the adults and trees showing signs of infestation.

Communities with known EAB infestations:

Berkshire County - Dalton, Pittsfield, Lanesboro, Hinsdale, Hancock

Essex County - North Andover, Methuen, Haverhill

Suffolk County - Boston

If you think you're seeing EAB for the first time in your area, report it here: <http://massnrc.org/pests/eabreport.htm>.



Signs of Infestation



Ash trees with bark that woodpeckers have heavily attacked, leaving the trunk with flecked bark. (L-R, David Cappaert, Art Wagner, Catherine Lindell)



Healthy white ash bark (Maine Forest Service)



Epicormic sprouting (James W. Smith)



Bark split (Michigan Dept. of Agriculture)

Growing on Trees

DCR Urban and Community Forestry Challenge Grants

Deadline October 1 (Intent to Apply); November 1, Application

Challenge grants are 50-50 matching grants (75-25 for environmental justice projects) to municipalities and non-profit groups in Massachusetts communities of all sizes for the purpose of building local capacity for excellent urban and community forestry at the local and regional level.

The USDA Forest Service provides funding for the grant program, and DCR administers the grants with guidance from **the Massachusetts Tree Wardens' and Foresters' Association. The DCR Urban and Community Forestry Program** assists communities and nonprofit groups in their efforts to protect and manage community trees and forest ecosystems, **with the ultimate aim of improving the environment and enhancing the livability of all of Massachusetts's communities.**

For more information on the Challenge Grants (including our Eversource Go Green grants and National Grid Partnership Grants, contact Julie Coop at 617-626-1468 or julie.coop@state.ma.us or Mollie Freilicher at 413-577-2966 or mollie.freilicher@state.ma.us.

Changes to the DCR Urban and Community Forestry Challenge Grant Program

In 2016, our Urban and Community Forestry Challenge Grant will move to one grant round per year. The annual deadline will be November 1. This move will enable the program to better review and compare grant proposals. Look for some additional changes to the 2016 program in upcoming issues.

Attention Tree Wardens of Western Mass., Tree Companies, and Utility Arborists

Inaugural Dinner Meeting

Thursday, June 4, 2015, 5:00 - 7:30 p.m.

Speaker: Ken Gooch, DCR Director of Forest Health
Northampton, MA

ISA, MCA, and pesticide credits have been requested.

Sign up by June 1



Come to the inaugural meeting of the Western Mass Tree Wardens, a sub-group of the **Massachusetts Tree Wardens' and Foresters' Association.**

- Meet and network with other tree wardens and tree companies from Western Mass.
- Hear Ken Gooch discuss Emerald Ash Borer (EAB) and what you can do to minimize the impact.
- Earn CEUs.

If your select board asks what your community is doing about EAB, do you have an answer?

For more information and to register go to <http://masstreewardens.org/> or contact Karen at 781-894-4759 or info@masstreewardens.org

In partnership with the Massachusetts Tree Wardens' and Foresters' Association, Massachusetts Department of Conservation and Recreation, UMass Department of Environmental Conservation, Center for Agriculture, Food & the Environment, USDA Forest Service, and Eversource Energy.

Growing on Trees

Webcasts

Urban Forestry Today Summer Noonhour Webcast Series

Theme: Human Dimensions of Urban Forestry

Thursday, June 18, 2015, 12:00 p.m.- 1:00 p.m.

Volunteers – The Changing Face of Urban Forestry

Dr. Dave Bloniarz, US Forest Service, Research Scientist & Director of the Urban Natural Resources Institute (UNRI)

Empowering and successfully managing local grassroots volunteers and community-based organizations can result in transformation of the urban forest. Learn about **the how's and why's of utilizing this critical natural resource.**

To Attend, Visit: www.joinwebinar.com

Access Code: 122-297-139

For more information, contact:

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University of Massachusetts, Amherst

rharp@eco.umass.edu

Sponsored by the University of Massachusetts Department of Environmental Conservation, in cooperation with the Massachusetts Tree Wardens' & Foresters' Association, University of Massachusetts Extension, the Massachusetts Department of Conservation and Recreation, and the U.S. Forest Service.

Urban Forest Connections

Second Wednesdays | 1:00 – 2:00 pm ET

The Forest Service's Urban Forest Connections webinar series brings experts together to discuss the latest science, practice, and policy on urban forestry and the environment. These webinars are open to all. Past webinar presentations and recordings are available online: <http://www.fs.fed.us/research/urban-webinars/>.

Resilient Cities

June 10, 2015 | 1:00-2:00pm ET

Samuel Carter, The Rockefeller Foundation

Lindsay Campbell, USDA Forest Service

Upcoming Sessions:

July 8, 2015 | 1:00-2:00 p.m. ET

August 12, 2015 | 1:00-2:00 p.m. ET

New England Forestry

Foundation Annual Meeting

Saturday, June 13, 11:30 a.m. to 4:00 p.m.

Prouty Woods Community Forest

32 Foster Street, Littleton, MA

Join the New England Forestry Foundation (NEFF) on June 13, in celebrating our partnerships around the region at Prouty Woods Community Forest. We welcome you and your family for brief morning talks, a barbecue lunch, and family-friendly adventures—including a farm tour and canoeing on Long Lake!

11:30—1:30 Speakers and BBQ Lunch: You'll hear about forests and fish from the Downeast Salmon Federation, forests and recreation from the Rochester Area Sports Trail Alliance, forests and farming from the new Littleton Community Farm, and forests and a regional sense of place from the Boston Public Market, a new regional market set to open in July in the Haymarket building.

1:30—4:00 Family-Friendly Activities: Littleton Community Farm tour, guided trail walk, arts and crafts, and canoeing on Long Lake

Free for members

Nonmembers: \$15 per adult, \$5 per child (under 14)

To register, please click [HERE](#) or call Kasey Currier at (978) 952-6856 ext. 110.

Please RSVP by June 4th

Dress is picnic casual.

For directions, please click [HERE](#).

We do our best to ensure that listings are accurate, but please check with program organizers for the most up-to-date information.

Growing on Trees

Help The Grove find the Great American Tree for 2015!



Everyone has a favorite tree. It might be a landmark to your community, have a compelling story, or makes a huge environmental contribution. The tree may be the epitome of perseverance or it may be a testament to history. It could be grand and noble

or small and dignified. Whatever statement your favorite tree makes, nominate it - in the first annual Great American Tree Competition.

Guidelines for nominations:

Nominations must include a photo (high-resolution preferred), a description of why the tree is special, the tree **species, tree size (height and/or diameter), and the tree's location** (GPS or street address).

Nominations may be posted to any of the following: [On your state grove](#), [Facebook](#), [Twitter](#) (@plantyourlegacy), [Pinterest](#), or as an attachment to an [e-mail](#). You may also go to your state grove by using your "state name" grove.org domain name (e.g. [massachusettsgrove.org](#)).

All trees, no matter how they are submitted, will be posted to American Grove within their state grove, where they will be voted upon. After winners from each **state and/or territory are determined, an "all-star" urban forestry panel** will cast its votes and The Great American Tree will be named.

Timeline:

April 30: Contest Begins. Submit by commenting at [The Grove](#) (must be a member) or via our Facebook or Twitter Accounts by clicking on the links below.



June 30: Deadline for Nominations

July 30: State Voting

August 30th: National Voting by Panel

September 15th: Winner Announced!

Share your enthusiasm for America's appreciation of trees by posting the tree that you think should be the Great American Tree!

Exploring the Urban Forest

Multiple dates this summer

Cities are made up of buildings and streets, but between and among human structures are thousands of trees that make up the urban forest. Earthwatch is collaborating with the arborist of the City of Cambridge, just across the river from Boston, to collect data to study and protect the 18,000 trees that make up the city's critically important urban forest.

You'll be trained in techniques for identifying species, measuring and observing individual tree samples, and uploading data via mobile apps. During the course of the day you'll work in groups, exploring Cambridge's urban forest and collecting data on the health, growth patterns, and impact on buildings and streets of individual trees.

You'll help build a growing database of information needed to understand how trees positively impact urban areas and what trees need to survive and thrive in stressful environments.

For more information, go to:

<http://earthwatch.org/expeditions/exploring-bostons-urban-forest>

Caterpillars of Winter Moths Threaten Region's Trees, Again

By Carolyn Y. Johnson May 27, 2015

It's the annual attack of the tiny, very hungry winter moth caterpillars. You may have seen them in your yard. On your car. Dropping into your lap. Over the past few days, the green inchworm caterpillars have begun ballooning down out of trees by the thousands, dangling on a wisp of thread and leaving behind a tattered, frayed canopy of leaves. With the annual winter moth caterpillar outbreak in full force, homeowners and tree care companies are facing a rite of spring that **has become a major threat to the health of the region's trees.** "There's a tattering of the leaves — it's a lot of holes on the leaves. A lot of this comes from the caterpillars feeding on the buds before they open," said Joseph Elkinton, a professor of entomology at the University of Massachusetts Amherst who has for a decade been releasing a parasitic fly that has begun to have success in controlling the population of hungry caterpillars. Read the full story at [bostonglobe.com](#).

Gleanings

Help "Outsmart" Invasive Species in Massachusetts

If you have a smartphone or a digital camera, the power to protect the natural heritage of Massachusetts is already in your hands. Join the Outsmart Invasive Species Project to help stop the spread of non-native plants and insects that threaten our environment. [The Outsmart Invasive Species Project.](#)



And take a look at this [fun video](#).

From *Ebb and Flow* Newsletter, the Newsletter of the Division of Ecological Restoration

Once considered the antithesis of a verdant and vibrant ecosystem, cities are now being hailed as highly efficient and complex social ecological systems. Emerging from the streets of the post-industrial city are well-tended community gardens, rooftop farms, and other viable habitats capable of supporting native flora and fauna. At the forefront of this transformation are the citizens living in the cities themselves. As people around the world increasingly relocate to urban areas, the new book [Urban Environmental Stewardship and Civic Engagement: How Planting Trees Strengthens the Roots of Democracy](#) discusses how they engage in urban stewardship and what civic participation in the environment means for democracy. Drawing on data collected through a two-year study of volunteer stewards who planted trees as part of the [MillionTreesNYC](#) initiative, this book examines how projects like this can make a difference to the social fabric of a city. It analyses quantitative survey data along with qualitative interview data that enables the volunteers to share their personal stories and motivations for participating, revealing the strong link between environmental stewardship and civic engagement. Click [here](#) to order the book or for more info.

Watch out for ticks!

Working outside?
Check yourself for ticks.
Every day.

Learn more about how to prevent tick bites, reduce ticks in your yard, and what to do if you are bitten by a tick at <http://tickencounter.org/>, a website from the University of Rhode Island.



Interested in information about ticks in Massachusetts, check out the statistics from the UMass Lab of Medical Zoology (LMZ): <http://stats.tickdiseases.org/>.

Have you been bitten by a tick? Save it and submit it for testing for a variety of pathogens including those that cause Lyme disease and babesiosis. Go to <http://www.tickdiseases.org/tick-testing/what-is-tick-testing/> to learn more.

Or learn more about the LMZ by watching this short video: <http://www.tickdiseases.org/information-links/tick-testing-video/>

If you are interested in a longer read on the history of ticks in New England, check out [this great article](#) from *Northern Woodlands Magazine*. "It's a story that involves ticks, deer, and rodents, primarily, but also migratory birds, invasive exotic plants, killer mold spores, and warm winters. And this story starts each June, as the sun dapples the forest floor and tick larvae rise from the **detritus to feed.**" Click [here](#) for the full, fascinating story.



Prevention fashion.

Gleanings—Community Shared Solar

Community solar projects are underway in Massachusetts. **If you're not familiar with community shared solar**, you can think of community shared solar the way you think of a community garden. There are several models for shared solar projects, but generally, participants purchase a share of a solar array located in or nearby their home community and they then earn the benefits, such as a credit on their electric bill. Community shared solar projects open the market to those who are renting, **those who don't have a rooftop for solar (such as apartment dwellers), or those who don't have the right exposure or space for solar panels.** It also opens up the market to those property owners who want to join the market, but who also want to keep their house lots shady. With community solar, the pressure to increase solar gain on a property is reduced.

Find out more about Community Shared Solar in Massachusetts

Community Shared Solar: Review and Recommendations for Massachusetts Models: <http://www.mass.gov/eea/docs/doer/renewables/solar/community-shared-solar-model-frameworks-032813.pdf>

Community Shared Solar: Implementation Guidelines for Massachusetts Communities
<http://www.mass.gov/eea/docs/doer/renewables/solar/community-shared-solar-implementation-guidelines-with-contracts-032913.pdf>

An inexhaustive list of community solar projects (mostly) in Massachusetts

[Adams Community Solar Array](#), 217 East Road, Adams. (Under construction)

Brewster Community Solar Garden:
<http://www.brewstercommunitysolargarden.com/>

Coop-Power, Community Solar project in Brattleboro, VT <http://www.cooppower.coop/>

Harvard Solar Garden, Harvard, MA:
<http://www.harvardsolar.org/>

Buying Into Solar Power, No Roof Access Needed

By Dianne Cardwell June 19, 2014

Like many consumers, David Polstein had already done much to reduce energy use in his large Victorian home in Newton, Mass. He replaced his appliances with energy-efficient models, installed better heating and put in new insulation. But he was unable to get a solar system to reduce his utility bill, he said, because his roof is too small and shady to make it worthwhile.

Now, that could be changing. Mr. Polstein is considering joining a so-called community solar garden that is under development in his part of the state, one of many similar new arrangements now available in Massachusetts. Through the approach — largely pioneered in Colorado and spreading across the country — customers buy into a solar array constructed elsewhere and receive credit on their electricity bills for the power their panels produce.

For developers, such shared or community solar arrays create a new market from the estimated 85 percent of residential customers who can neither own nor lease systems because their roofs are physically unsuitable for solar or because they do not control them — like renters and people living in large apartment buildings. And for those customers, it offers a way into the solar boom, whether they seek to contribute to the spread of clean energy or to reap the potential cost savings.

“I pretty much realize that if I'm going to do this sort of thing,” Mr. Polstein, a violin maker, said, “this is the only way I'm going to be able to do it.”

Massachusetts passed its law enabling community renewable energy projects in 2008 and saw at least one town solar garden begin operating in Brewster in 2012. Now, [Clean Energy Collective](#), a leading developer, is building systems that are due to start producing power in Massachusetts by the end of this month. The company has teamed with [Next Step Living](#) of Boston, a home energy-efficiency company, which is selling the product to consumers across Massachusetts. Read the full story at [The New York Times](#).

News

As Winter Moth Green Inch Worm Caterpillar Larvae Continue to Feed On Trees, Here's What You Can Do

May 18, 2015—If you live along the coast of Maine south into Massachusetts and west of Boston you have likely noticed small green caterpillars eating some or maybe all of your trees. Some of you have asked about what these small green inch worms are and how to control them. These green caterpillars are the larvae form of the winter moth. This insect entered the northeast during the past decade and continues to spread west and south. It was found in Canada back in the 1930s after arriving from Europe. Read the full post at Boston.com.

Tracking Photosynthesis from Space

By Jessica Stoller-Conrad

May 5, 2015 Watching plants perform photosynthesis from space sounds like a futuristic proposal, but a new application of data from NASA's Orbiting Carbon Observatory-2 (OCO-2) satellite may enable scientists to do just that. The new technique, which allows researchers to analyze plant productivity from far above Earth, will provide a clearer picture of the global carbon cycle and may one day help researchers determine the best regional farming practices and even spot early signs of drought. When [plants](#) are alive and healthy, they engage in photosynthesis, absorbing sunlight and [carbon dioxide](#) to produce food for the plant, and generating oxygen as a by-product. But photosynthesis does more than keep plants alive. On a global scale, the process takes up some of the man-made emissions of atmospheric carbon dioxide—a greenhouse gas that traps the sun's heat down on Earth—meaning that plants also have an important role in mitigating climate change.

To perform photosynthesis, the chlorophyll in leaves absorbs sunlight—most of which is used to create food for the plants or is lost as heat. However, a small fraction of that absorbed light is reemitted as near-infrared light. We cannot see in the near-infrared portion of the spectrum with the naked eye, but if we could, this reemitted light would make the plants appear to glow—a property called solar induced fluorescence (SIF). Because this reemitted light is only produced when the chlorophyll in plants is also absorbing sunlight for photosynthesis, SIF can be used as a way to determine a plant's photosynthetic activity and productivity. Read more at phys.org.

Citizen Science Helps Predict Spread of Sudden Oak Death

May 1, 2015—Efforts to predict the emergence and spread of sudden oak death, an infectious tree-killing disease, have gotten a big boost from the work of grass-roots volunteers. A joint study reveals the power of citizen science in "SOD Blitz," a survey project in which volunteers are trained to identify symptoms of sudden oak death. Led by Matteo Garbelotto at the University of California, Berkeley, and Ross Meentemeyer at North Carolina State University, the study will be published Friday, May 1, in the journal *Frontiers in Ecology and the Environment*. Sudden oak death is a fungus-like disease that has felled hundreds of thousands of trees in California. Crowd-sourcing the survey and sampling work allowed researchers to gather information that would otherwise be too impractical and cost-prohibitive to obtain, and to then use the data to create a model that predicts the presence of the sudden oak death pathogen, *Phytophthora ramorum*, based upon such variables as rainfall and density of host trees.

Study authors compared the model based upon crowd-sourced data gathered from the 2008-2013 blitzes with models using "pre-Blitz" research observations collected from 2000 to 2007. They found the SOD Blitz model to be more powerful, correctly predicting the presence of the pathogen 74 percent of the time compared with models based on other sources of data. "This paper shows that volunteers are as proficient as professionals in collecting data after they get some initial training," said study principal investigator Garbelotto, an adjunct professor and cooperative extension specialist at UC Berkeley's Department of Environmental Science, Policy and Management. "The data we got from SOD Blitz resulted in the formulation of the best predictive model yet about the spread of sudden oak death in California. Additionally, we were able to identify new infestations and identify trees that needed to be removed. In one case, in Atherton, tree removal resulted in the only successful eradication of the pathogen in North America." Read more at phys.org.



News

Vivid Map Pinpoints Every Street Tree in NYC

By Neel V. Patel

April 21, 2015—**Manhattan's trees tend** to get overshadowed—quite literally in some cases—by skyscrapers **that line the city's streets. But they play an essential role in the city's habitat: providing oxygen, supporting wildlife, and managing the flow and movement of rainwater.** Keeping all of those ecological elements in check, though, means the city needs to keep careful tabs on its trees. Starting in May, the NYC Department of Parks and Recreation will begin a five to seven month-long street census to locate and identify the species of every street-side tree. Once those data are in hand, the city will have to figure out how to visualize them. Brooklyn web developer [Jill Hubley](#) is one step ahead: She made this map, pinpointing the 592,130 street trees (52 species!) in New York as they were documented in the last census in 2005. **It's an excellent tool that sheds light on some peculiar patterns in the city's landscape. And they reveal a lot about how the NYC Department of Parks and Recreation makes its decisions—and how they can be making them better.** Read the full story at [Wired.com](#).

Holyoke Gets Municipal Tree Nursery with \$100,000 grant

By Mike Plaisance

May 20, 2015—The city will be starting its own nursery this summer with a \$100,000 state grant to replace trees without having to rely on commercial providers. "It gives us more control over what we plant throughout the city. We have a need to diversify our tree population; relying on commercial nurseries limits the range of what might be available when we are ready for a planting project," [Conservation Director Andrew Smith](#) said Wednesday (May 20). The site for the tree nursery hasn't been decided but it will be on city land with access to electrical power. Only about a half-acre is needed for a nursery of 600 trees, which at that stage of growth are small, he said. Read the full story at [masslive.com](#).

Trees in the City:

Some Streets Have It Made in the Shade

The higher the income in a neighborhood, the more trees it has, a new study finds

By Anne Kadet

May 1, 2015—**Springtime in New York. It's when the streets bloom with cherry-blossom clouds and the London Plane trees unfurl their sparkling green canopies.** That is, unless you happen to live in a low-rent neighborhood. **Then you'll have to make do with the shade of the occasional stop sign. Yes, the contrast between the lushly forested streets of the city's wealthier enclaves and the bleak, barren boulevards elsewhere is obvious to everyone. I've marveled at how abruptly the tree party stops crossing from my neighborhood, Cobble Hill, to Gowanus, the lower-income neighborhood next door. A bit further east and you're suddenly in upscale Park Slope, where it's a veritable tree convention. But never mind the anecdotal observations. A new study published in the online research journal PLOS One quantifies the disparity. Citywide, for every \$10,000 increase in a neighborhood's median household income, you'll find a nearly 1% increase in tree-canopy coverage. The correlation isn't as strong as in other towns the study covers, but it is "positive and significant," says co-author Kirsten Schwarz, an ecologist at Northern Kentucky University: "That's why we titled the paper, 'Trees Grow on Money.' "** Read the full story at [The Wall Street Journal](#).

Using Inventory Data: D.C. Has 13,000 Open Spots For Trees. Here's How You Can Fill Them

By [Perry Stein](#)

April 20, 2015—In Ward 1, there are 162 empty tree boxes designed to have a tree planted in them. In Ward 5, that number skyrockets to 3,728 empty tree boxes. These numbers come from the District Department of **Transportation's Urban Forestry Administration, which is responsible for maintaining and increasing the number of trees in the city's public spaces. District resident Emanuel Feld, 23, culled through this city data to create an interactive map in which residents can see where the city has vacant tree boxes and lodge a request with the city to plant some. The site, [GetDCTrees.org](#), launched Wednesday and Feld hopes it results in a more equal distribution of trees throughout the District. Read the full story at the [Washington Post](#).**

On the Horizon

June 3	Tree City/Line/Campus USA Awards Ceremony, Amherst, MA	Sept 24-26	TRAQ Training, Portsmouth, NH, www.newenglandisa.org
June 4	Western Mass Tree Wardens Dinner Meeting, Northampton, MA, www.masstreewardens.org	Sept 27	Mass. Town Forests Celebration, Wilbraham, MA
June 11	Best Management Practices for Minimizing Landscape Pests, UMass Extension, Hadley Farms Meeting House, Hadley, www.umassgreeninfo.org	Sept 28-30	TRAQ Training, South Portland, ME, www.newenglandisa.org
June 12-13	New England ISA Tree Climbing Competition, Northampton, MA www.newenglandisa.org	Oct 2	MCA Exam, Elm Bank, Wellesley, www.massarbor.org
June 13	New England Forestry Foundation Annual Meeting & Picnic, Littleton, MA, www.newenglandforestry.org	Oct 2-3	SAVE THE DATE—2015 DCR Tree Steward Training
July 17	Chipper Operator Specialist Workshop, TCIA, Westbrook, ME, www.tcia.org	Oct 9-11	Women's Tree Climbing Workshop, Petersham, MA, www.newenglandisa.org
July 23	MNLA Annual Summer Conference, Topsfield, MA www.mnla.com	Oct 20	MAA Safety Saves, Elm Bank, Wellesley, www.massarbor.org
Aug 5	Mass. Certified Horticulturalist (MCH) Exam, Westborough, MA, www.mnla.com	Oct 20	MAA Dinner Meeting, Framingham, www.massarbor.org
Sept 21-23	TRAQ Training, Montpelier, VT, www.newenglandisa.org	Oct 25-27	New England ISA Annual Conference, North Conway, NH, www.newenglandisa.org
Sept 22	MAA Dinner Meeting, Framingham, www.massarbor.org	Nov 12-14	TCI Expo, Pittsburgh, PA, www.tcia.org
Sept 23	Saluting Branches, Arborist Day of Service, www.salutingbranches.org	Nov 16-17	Partners in Community Forestry Conference, Denver, CO, www.arborday.org
		Dec 2-4	New England Grows, Boston, MA, www.newenglandgrows.org
		Dec 2-5	American Society of Consulting Arborists Annual Conference, Tuscon, AZ, https://www.asca-consultants.org/

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If you have a topic you'd like to see covered or want to submit an item to *The Citizen Forester* (article, photo, event listing, etc.), please contact [Mollie Freilicher](mailto:mollie.freilicher@state.ma.us) or click [here](#).

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